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Validation of the Child and Youth Resilience Measure-28 (CYRM-28) Among Canadian Youth

Linda Liebenberg[1], Michael Ungar[1], and Fons Van de Vijver[2]

Abstract

Objectives: This article presents the validation of the 28-item Child and Youth Resilience Measure (CYRM-28) among two Canadian samples of youth with complex needs. Method: The CYRM-28 was administered to two groups of concurrent service using youth in Atlantic Canada ($n_1 = 497$; $n_2 = 410$) allowing for use of exploratory and confirmatory factor analysis. Results: Reproducibility agreement is achieved and subscales of the measure are confirmed and show adequate psychometric properties. Conclusions: Findings add support to the CYRM-28 as a reliable and valid self-report instrument that measures three components of resilience processes in the lives of complex needs youth. Advanced statistical modeling yielded evidence that the scale, originally developed for use in various countries, can be used to assess resilience in youth from various ethnocultural backgrounds in Atlantic Canada.

Keywords

scale validation, child and youth resilience measure, resilience, youth, protective processes

It is now widely accepted that resilience is the capacity of individuals to overcome adversity and do well in spite of exposure to significant adversity: resilience has a functional aspect in relation to the presence of risk as an atypical developmental process (Cicchetti, 2003; Luthar, 2006; Masten, 2001; Rutter, 2000; Ungar, 2008). It is also accepted that resilience is associated with individual capacities (such as the capacity to form attachments, self-regulate, cognitive skills, and personality or temperament), relationships (with family, friends, peers, and the ability to interact in socially appropriate ways with members of the broader community), and the availability of community resources and opportunities (including educational, health, recreational, and social services) (Luthar, 2006; Masten, 1999; Ungar, 2011).

Studies of these components and how they function in the lives of those confronted by risk have affirmed that resilience is not a static state, an outcome or an inherent trait within the individual. Rather, the interactions between an individual's environment and an individual's assets generate processes that help people to overcome adversity. As Ungar (2008) explains, "in the context of exposure to significant adversity, whether psychological, environmental, or both, resilience is both the capacity of individuals to navigate their way to health-sustaining resources, including opportunities to experience feelings of wellbeing, and a condition of the individual's family, community, and culture to provide these health resources and experience in culturally meaningful ways" (p. 225). Understanding resilience in this way helps us to see resilience as a multidimensional process that mediates the effects of stressors and the achievement of positive outcomes (Gunnar, 2006; Ungar, Liebenberg, Armstrong, Dudding, & Van de Vijver, under review). Many authors have discussed the interactive nature of resilience: how it is impacted by personal, relational, and contextual factors in the lives of youth (Bottrell, 2009; Luthar, 2006).

Given the multiple processes involved in resilience, there are also multiple pathways to resilience, embedded in varying contexts that require our attention and understanding (Masten & Obradović, 2006). In this regard, our understanding is that "resilience has global as well as culturally and contextually specific aspects" (Ungar, 2008, p. 226). The reasons for this are twofold. First, youth are confronted by contextually specific risks related to their exposure to acute and chronic stressors. And second, how risks are managed individually, within families or as communities is influenced by contextual and cultural resources. So, while there may be global aspects of resilience relevant to youth internationally, resilience related patterns of functioning and expression are contextually distinct, impacted

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by sex, race, ethnicity, and culture (Tricket & Burman, 2000; Ungar & Liebenberg, 2009; Wyman, 2003). Such understandings of resilience correspond to findings in anthropology which challenge understandings of youth development as a homogenous experience (Brown, Larson, & Saraswathi, 2002). Our previous work, for example, has identified seven themes, or what we termed ''tensions,'' related to resilience. Our work has also demonstrated that while all seven tensions are present across multiple cultures and contexts, how they are resolved across these cultures and contexts can be very different (Ungar et al., 2007). This same study also underscored the differences that are present among youth within seemingly homogenous settings but where varying cultural heritage underlies and impacts youth experiences and resilience processes (Ungar, Brown, Liebenberg, Cheung, & Levine, 2008).These findings reflect the conclusions of other researchers who have investigated positive outcomes among youth (Dei, Massuca, McIsaac, & Zine, 1997; Elliott et al., 2006; Morris, 2007), as well as ethnic identity development (Chan, 2007; Hallett et al., 2008; Phinney, 2008).

In spite of these developments, Masten (2007) notes that discrepancies surrounding the definition of resilience and subsequent difficulties in operationalizing the construct have plagued the short history of resilience research. She argues that while much of this may stem from a lack of capacity in research skills to address these concerns, subsequent development in disciplines researching human resilience now stand to address these issues well. The limitations in resilience research development are evident in the apparent lack of valid youth focused measures, as well as measures that have emerged out of, and account for, the heterogeneity of culture and experiences of youth (Clauss-Ehlers, 2008). In a recent review by Windle and colleagues (Windle, Bennett, & Noyes, 2011), 19 measures of resilience were identified (15 core measures with four adapted versions). The authors conclude that additional validation work is required on all existing scales, those aimed at youth in particular. These gaps are particularly troublesome given the increased inclusion of the concept in interventions with youth that aim to promote competence and wellness (Cicchetti, Rappaport, Sandler, & Wessberg, 2000; Liebenberg & Ungar, 2008; Luthar, 2006; Luthar & Cicchetti, 2000). As Masten (2007) further argues ''Resilience research always had a pragmatic mission: to learn better ways of preventing psychopathology and promoting healthy development among children at risk for problems'' (p. 926).

Initial Development of the CYRM-28

The CYRM-28) is a 28-item measure whose development was prompted by the need for a more inclusive understanding of resilience across cultures and contexts (Seccombe, 2002; Ungar, 2005). The CYRM was initially developed using a mixed-methods (qualitative and quantitative) design in 11 countries with 1,451 youth aged 13–23. Sites and youth were purposefully selected to maximize diversity regarding social context and the risks these youth face (Ungar & Liebenberg, 2005, 2011). The measure accounts for individual, peer, family, and community resources implicated in resilience processes (see Masten, 2001; Rutter, 1987).

Using an iterative community-based process of consultations, 58 items related to ''doing well'' were generated for inclusion in the first version of the measure. Qualitative focus groups were conducted across all participating sites and included youth and adults. All participants were considered to have something important to say about youth in their own communities and the risks these youth face. This first iteration of the CYRM, the CYRM-58, was then administered to at least 60 youth in each of 14 sites. Resulting data were analyzed for item reduction using exploratory factor analysis (EFA) supported by findings from additional individual qualitative interviews with youth and adults at each site, conducted following the quantitative data collection (Ungar & Liebenberg, 2011). This process resulted in a 28-item measure, the CYRM-28. All items are rated on a 5-point scale from 1 = *does not describe me at all* to 5 = *describes me a lot*, with higher scores indicated increased presence of resilience processes.

Of note in the initial analysis was that no single factor solution could be found for all 58 items for the total sample of youth. Using a multistep process of EFAs where four subgroups of youth were identified (boys and girls of the majority culture in western contexts; girls in non-Western contexts; and boys in non-Western contexts living in high- and low-cohesion communities), we were able to determine which of the items were important to youth across all sites. Meaningful solutions could be found for each of the four groups. An unrotated EFA was then used to identify those items that loaded onto the first factor for each of the four subgroups of youth, as well as the combined total sample. Those items that were consistent across all five analyses (i.e., the four subgroups of youth and the total sample of youth) were retained in the CYRM-28 (for a detailed explanation of the process see Ungar & Liebenberg, 2011).

While initial development of the measure has ensured inclusion of items that account for the multiple components of resilience and the measure's relevance cross culturally, identification and validation of subscales were not conducted at the time of the measure's initial development. Given the multidimensional construct of resilience, it is anticipated that the CYRM-28 has multiple subscales.

Confirmation of the CYRM-28's structure would also address the concerns raised by Windle, Bennett, and Noyes (2011) and increase its relevance for use in research that seeks to better understand functioning of resilience processes among specific groups of youth and, or, programming that aims to improve positive outcomes for youth. Following on our previous instrument development work, we anticipated that while there would be high factorial invariance of the CYRM-28 subscales across various populations, there would be significant differences in terms of how youth score across ethnoracial, age, and gender groups, reflecting the differential functioning of resilience processes (Ungar et al., 2007, 2008).

Phase 1: Subscale Identification and Reproducibility of the CYRM-28

Sample and Data Collection

The CYRM-28 was administered to a purposive sample of 497 youth who were identified as concurrent users of multiple services (child welfare, mental health, juvenile justice, special educational supports, and community programs) in rural and urban communities of Atlantic Canada participating in the *Pathways to Resilience* study (www.resilienceresearch.org). Youth known to be multiple service users were nominated to the study by service providers. Following provision of informed consent, the Pathways to Resilience Youth Measure (PRYM) was administered to participating youth. The PRYM is a compendium of measures used to explore the individual, family, school, and community risks youth face, the formal and informal resources available to youth (including an audit of the services they use and their service use satisfaction) and resilience. All items of the CYRM-28 are included in the PRYM. The PRYM was administered to youth individually or in groups smaller than five. All questions were read to the youth. Administration took between 45 and 60 min.

The mean age of youth was 16.85 years ($SD = 1.868$); 281 (56.5%) of the participants were male and 220 (44.3%) participants self-identified as visible minorities. At the time of the study, 194 (40%) participants were living with both parents and 80 (16%) were living with a single parent. Seventy-nine (16%) youth were living in care and 144 (28%) were living independently. All participants were referred to the study by participating service providers. All youth were known to have used at least two services within the 6 months prior to participation. The data were gathered between January 2008 and December 2009.

The PRYM was administered twice to a subsample of youth from a single participating organization providing services to street engaged youth. Data were used to establish reproducibility of the CYRM-28. Fifty-three youth, 22 girls, and 31 boys were met with 3- to 5-weeks apart for repeat administration of the measure. The mean age of these youth was 18 years ($SD = 2.005$).

Data Analysis and Results

The data were analyzed using Predictive Analytics Software (PASW) Statistics 18 and AMOS 18 for Windows. An EFA was conducted on all items of the CYRM-28 with obliquerotation (Direct Oblimin) using the covariance matrix. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis (KMO = .883). Bartlett's test of sphericity, $\chi^2_{(378)} = 4433.291$, $p < .001$, indicated that correlations between items were sufficiently large for an EFA. An initial analysis was run to obtain eigenvalues for each component in the data. Seven components had eigenvalues greater than one and in combination explained 59% of the variance. The scree plot, however, contained two points of inflection, suggesting retention of three or seven components for the final analysis. A three-factor structure best reflects the theoretical models of resilience as explained by Garmezy (1985), Luthar, Cicchetti, and Becker (2000), Masten (2001), Rutter (2000), and Werner (2000). Table 1 shows the factor loadings of the three-factor solution after rotation. While most item loadings were in line with expectation, 10 items loaded on two components. Strength of loading combined with theoretical grouping of other items on the components clearly aligned seven of the items with particular components. Three items however, had poor item loadings in addition to appearing on two components (I have people I look up to, I know where to go to get help, and I am proud of my citizenship). Decisions regarding on which components items should be retained were theoretically informed. So, while *I have people to look up to* appeared on both Components 1 (.363) and 3 (.211), the notion of mentors as a factor associated with community capacity meant it was included on Component 3 (Contextual aspects of resilience). The item *I know where to go to get help* loaded on Components 1 (.215) and 2 (−.259). Theoretically, this item is better aligned with notions of self-efficacy and as such was included on Component 1 (Individual aspects of resilience). Finally, *I am proud of my citizenship* appeared on Components 1 (.259) and 3 (−.233). As the item investigates an individual's sense of connection to context, in this case, country, it was retained on Component 3. Specifically, item clustering suggests that Component 1 represents individual characteristics of resilience, Component 2 relational resources with parents or primary caregivers, and Component 3 contextual resources that facilitate a sense of belonging. The first three factors explained 40.4% of the variance for the total model, with each component explaining 26.2%, 8.0%, and 6.3% of the variance, respectively. Reliability of subscales was assessed using Cronbach's α (see Table 1).

Internal reliability of the three components on the CYRM-28 was assessed using Cronbach's α, paired sample *t* tests, and interclass correlation coefficients on Time 1 and Time 2 responses. Cronbach's α ranged from .65 to .91 and was acceptable in all cases. For all three components, the paired sample *t* tests showed no significant differences between Time 1 and Time 2 (see Table 2), which suggests that scores show good cross-temporal stability. Finally, the interclass correlation coefficients (absolute agreement) showed high values for all three components, ranging from .583 to .773. The computations converge in that the scale's components have adequate psychometric properties.

Given the theoretical understanding that the major categories of resilience (i.e., individual; relationship with caregivers; and community and contextual resources) have subcomponents or indicators such as self-efficacy, sociability, and cultural connection (Garmezy, 1985; Luthar et al., 2000; Masten, 2001; Rutter, 2000; Werner, 2000), further analysis was conducted on each of the three subscales. An EFA using oblique rotation (Direct Oblimin) supported mean clustering of items within each factor of the model. Oblique rotation was used given the correlations between indicators on each of the three individual subscales. Analysis of the 11 items on the individual factor revealed three components with eigenvalues exceeding 1, explaining 54.17% of the variance. Five items

Table 1. Patternmatrix of the Three-Factor Solution for the CYRM-28

	Component		
	1. Individual	2. Relational	3. Contextual
I cooperate with people around me	**.572**		
I aim to finish what I start	**.508**		
People think I am fun to be with	**.580**		
I solve problems without drugs or alcohol	**.491**		
I am aware of my own strengths	**.491**		
Spiritual beliefs are a source of strength for me			**–.688**
I think it is important to serve my community			**–.614**
I feel supported by my friends	**.508**		–.243
My friends stand by me during difficult times	**.512**		
My caregivers watch me closely	–.202	**–.635**	
My caregivers know a lot about me		**–.733**	
I eat enough most days		**–.668**	.222
I talk to my caregivers about how I feel		**–.678**	
My caregivers stand by me during difficult times		**–.822**	
I feel safe when I am with my caregivers		**–.775**	
I enjoy my caregivers' cultural and family traditions		**–.459**	–.370
Getting an education is important to me	.239		**–.372**
I feel I belong at my school	.279		**–.398**
I have people I look up to	.363		**–.211**
I know how to behave in different social situations	**.718**		
I am given opportunities to become an adult	**.629**		
I know where to go to get help	**.215**	–.259	
I have opportunities to develop job skills	**.501**		
I am proud of my ethnic background			**–.513**
I am treated fairly in my community	.311		**–.436**
I participate in organized religious activities			**–.726**
I enjoy my community's traditions			**–.745**
I am proud of my citizenship	.259		**–.233**
α	.803	.833	.794

Note. Boldface values indicate on which factor item were retained. Extraction method: Principal component analysis. Rotation method: Oblimin with Kaiser Normalization.

reflecting personal skills (Component 1) explained 32.84% of the variance, while the 2 items reflecting peer support (Component 2) explained 11.66% and the 4 items reflecting social skills (Component 3) explained 9.97% of the variance. Analysis of the seven relationship with caregiver items revealed two components explaining 62.77% of the variance collectively: physical care giving (2 items; Component 1) and psychological care giving (5 items; Component 2). These two components explained 10.92% and 51.84% of the variance, respectively. Finally, analysis of the 10 items on the contextual factor sorted into three components, explaining 57.59% of the variance. Components included 3 spiritual items (Component 1), 2 educational items (Component 2), and 5 cultural items (Component 3) explaining 12.01%, 8.88%, and 36.71% of the variance, respectively.

Phase 2: Scale Confirmation and Identification of Group Differences

Sample and Data Collection

A second sample of 410 multiple service using youth, participating in a second phase of the pathways to resilience research program in the same Atlantic Canadian sites, were next introduced into the analysis. These youth were nominated to the study and completed the PRYM using the same procedures as during the first phase of the research. The mean age of youth was 15.96 years ($SD = 1.785$). Just over half of the sample was boys (235, 57.3%) with approximately two thirds identifying as visible minority youth (269, 66%). Data were gathered between January and December 2010.

Table 2. Paired Sample *t* Test of Three CYRM-28 Components Between Time 1 and Time 2

				Time 1		Time 2	
	t	*df*	*p*	*M*	*SD*	*M*	*SD*
1. Individual	.507	50	.614	43.11	5.302	42.74	6.870
2. Relational	−1.446	50	.154	22.59	7.852	24.21	6.374
3. Contextual	.630	50	.630	33.44	7.212	33.03	7.384

Data Analysis and Results

A confirmatory factor analysis was undertaken on the three-factor structure of the CYRM-28, with the clustered items (see

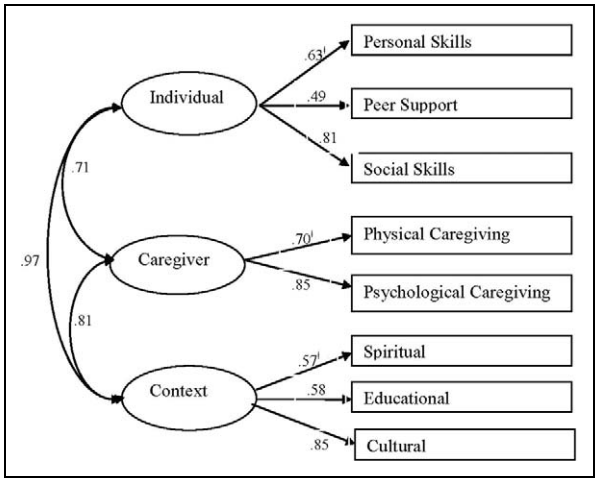

Figure 1. Confirmatory factor analytic model of the child and youth resilience measure (all depicted parameters are equal for both visible minority and visible majority youth)*. ‡Refers to a loading that was fixated at a value of 1 in the nonstandardized solution. *All reported coefficients differ significantly from 0 ($p < .01$).

Figure 1). Using multigroup analysis, we tested the invariance of the CYRM-28. The measurement model tested comprised the three latent variables (individual characteristics; relationship with primary caregivers; and contextual components that facilitate sense of belonging) as found in the EFA reported in the previous section. In the model, all three latent variables were allowed to covary.

The most restrictive model with good fit was the measurement residuals model (see Table 3), implying that all factor loadings and correlations are identical in the two groups. A good fit was obtained, $\chi^2(53, N = 410) = 98.00$, $p < .001$; Tucker-Lewis index (TLI) = .957; comparative fit index (CFI) = .979; root mean square error of approximation (RMSEA) = .046.

As could be expected all factor loadings were positive. Moreover, the three latent variables showed very high and significant positive correlations, suggesting that all components of resilience are positively correlated in this sample. Standardized loadings are high (.55 or higher; Tabachnick & Fidell, 2007) for all but peer support, where the loading is fair (.45 or higher). The strong correlations also suggest the presence of resilience as an underlying construct of the model. Subscale correlations ranged between .555 and .705 supporting both the positive relationship between the resilience components and their distinctiveness.

A multivariate analysis of variance (MANOVA) was conducted to test our hypothesis that significant differences exist between different ethnic, gender, and age groups of youth. The analysis was conducted with gender (two levels), age (two levels: youth 16 years and younger, and 17 and older), and visible minority/majority status as independent variables and the eight groupings of CYRM-28 questions as the dependent variables. Table 4 shows the effects. Significant multivariate main effects were found for gender, Wilks' $\lambda = .958$, $F(8, 395) = 2.167$, $\eta^2 = .042$, and visible minority/majority status, Wilks' $\lambda = .822$, $F(8, 395) = 10.694$, $\eta^2 = .178$.

Girls and visible minority youth consistently scored higher on all eight variables, than boys and visible majority youth (see Table 5). While we see significant differences between boys and girls, the key differences are found between visible minority youth and visible majority youth. Although there is a statistically significant difference between boys and girls on the combined dependent variables: $F(8, 395) = 2.167$, $p = .029$;Wilks' $\lambda = .958$; $\eta^2 = .042$, sex of youth only accounts for 4% of the variance. When considered separately, the only difference to reach statistical significance, using a Bonferroni adjusted α level of .006, was perceived level of psychological caregiving youth are receiving. Girls score slightly higher ($M = 4.309$; $SD = .758$) than boys ($M = 3.858$; $SD = 1.070$). The effect size however is small (3%; Cohen, 1988).

By contrast, differences between visible minority youth and visible majority youth account for 18% of the variance on combined dependent variables: $F(8, 395) = 10.964$, $p < .001$; $\lambda = .822$; $\eta^2 = .178$. Significant differences, again using a Bonferroni adjusted α level of .006, are seen on six of the eight dependent variables, with visible majority youth scoring consistently lower than visible minority youth (see Table 5).

Discussion and Applications to Social Work

Despite theoretical advances to our understanding the construct of resilience, validated assessments that will allow for rigorous review of resilience processes are still not well developed (Masten, 2007; Windle et al., 2011). This article documents the continued validation of the CYRM-28, building on the measure's initial development involving a mixed-methods iterative design with youth at multiple international sites (Ungar & Liebenberg, 2005, 2011). While initial work on the measure underscored high levels of face validity and relevance to youth across cultures and contexts, a global scale of resilience limits understanding of the various resilience attributes and their related processes.

Results suggest that the CYRM-28 has three subscales reflecting the major categories of resilience. Furthermore, each subscale has its own groupings of questions that serve as indicators of the construct's major categories. The first subscale reflects an individual factor that includes personal skills (5 items), peer support (2 items), and social skills (4 items). The second subscale deals with caregiving, as reflected in physical caregiving (2 items) as well as psychological caregiving (5 items). The third subscale comprises contextual components that facilitate a sense of belonging in youth, components related to spirituality (3 items), culture (5 items), and education (2 items). Reliability analyses demonstrate that the CYRM-28 and its subscales are internally consistent, while results from the CFA providing strong support for the model. Furthermore, no floor or ceiling effects were detected (Terwee et al., 2007). No participants scored the lowest possible score of 28 in either sample of youth. Only one participant (.2%) scored 140, the

Table 3. Model Fit Summary Statistics of CYRM-28 Confirmatory Factor Analysis

	CMIN	*df*	*p*	TLI	CFI	ΔCFI	RMSEA
Configural invariance	53.789	34	.017	.971	.982	—	.038
Measurement weights	62.433	39	.010	.970	.979	.003	.038
Structural covariances	68.412	45	.014	.974	.979	.000	.036
Measurement residuals	98.000	53	.000	.957	.959	.020	.046
Independence model	1164.961	56	.000	.000	.000		.220

Note. CFI = comparative fit index; DF = degrees of freedom; RMSEA = root mean square error of approximation.

Table 4. Results of a MANOVA Testing Sex, Age, and Ethoracial Differences (Cells Contain Effect Sizes)

	Source						
Dependent variables	Sex (S)	Age (A)	Ethnoracial (ER)	S × A	S × ER	A × ER	S × A × ER
Personal skills	.002	.001	.027***	.002	.002	.007**	.000
Peer support	.003	.003	.014*	.008	.006	.000*	.000
Social skills	.011*	.000	.009*	.001	.000	.001*	.001
Physical care giving	.005	.004	.051***	.001	.002	.000*	.000
Psychological care giving	.033***	.000	.059***	.007	.000	.000	.000
Spiritual	.004	.001	.144***	.000	.004	.006	.006
Educational	.003	.002	.024**	.000	.002	.001	.004
Cultural	.020**	.001	.061***	.001	.003	.000	.005

Note. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 5. Estimated Marginal Means for CYRM-28 Subscales by Gender and Ethnoracial groups

	Girls		Boys		Visible Majority		Visible Minority	
	M	*SE*	*M*	*SE*	*M*	*SE*	*M*	*SE*
Individual personal skills	4.011	.056	3.957	.041	3.867	.059	4.101	.037
Individual peer support	4.219	.089	4.089	.066	4.024	.094	4.284	.059
Individual social skills	4.307	.089	4.122	.066	4.132	.073	4.298	.046
Physical caregiving	4.295	.075	4.157	.056	4.009	.079	4.442	.049
Psychological caregiving	4.197	.086	3.802	.064	3.730	.091	4.269	.057
Context spiritual	3.188	.103	3.025	.076	2.577	.109	3.636	.068
Context education	4.049	.099	3.965	.073	3.834	.104	4.224	.065
Context cultural	4.251	.067	4.010	.050	3.917	.071	4.345	.044

maximum score in the first sample of youth, and four (1%) scored 140 in the second sample of youth.

Interestingly, the confirmatory factor analysis shows that context and individual components are more closely correlated than are individual and caregiver components or caregiver and context. This may be due to higher order systemic relationships (Bronfenbrenner, 1979) where caregiving, and the capacity to provide physical and psychological nurturance, occurs within the broader context and reflects the qualities therein. Stated differently, how caregivers are able to carry out their caregiving tasks is impacted on by the resources available to them as well as the stressors they face (Ungar, 2011; Werner & Smith, 1982). Context is also important because of its potential to compensate for reduced experiences of positive caregiving. Where capacity for caregiving is restricted, youth may find alternative sources of care in their communities. Criss, Pettit, Bates, Dodge, and Lapp (2002), for example, demonstrated how meaningful connections derived from positive peer relationships compensated for a lack of secure attachment with caregivers. In this way, context impacts both youth and those caring for youth. Therefore, context is important to both individual and caregiving subscales.

The CYRM-28's structure facilitates our ability to understand not only the dynamics and presence of the three subscales at play in the lives of youth but also has the potential to provide a more detailed understanding of the subtle characteristics of these processes. As illustrated in the MANOVA, ethnoracial status clearly plays a much larger role in differences across groups of youth than gender or age.

Furthermore, resilience is a hierarchical construct with different interrelated components: while all measures of resilience tend to be correlated they tend to be more strongly correlated within factors than across factors. Because resilience components present an additive model to counterbalance the

effects of adversity, the more service providers can increase the presence of the various components associated with resilience, the better we would expect the outcomes for youth to be. Presenting a measure that identifies resilience processes in this detailed manner facilitates our ability as clinicians and researchers to examine the processes at play in the lives of youth exposed to adversity, and importantly, explain how these processes operate in different contexts. Consequently, the CYRM-28 has potential for use in both clinical practice and research. The measure's composition of 28 questions that provide eight indicators of three resilience components provides clinicians with a short, yet detailed review of the resilience components that youth are drawing from, as well as those components that are lacking in their lives. In this way, existing strengths can be integrated into clinical work and drawn on to facilitate the bolstering of areas where supports and processes are not as strong.

When used in research and evaluation, the CYRM-28 complements need and risk assessments of populations of youth, identifying existing components available to youth that can be built on through intervention and changes to social policy. Furthermore, the instrument could be used longitudinally to measure effectiveness of programs preintervention and postintervention.

While this article lends further support to the CYRM-28 as a valid measure of resilience two limitations should be noted. Although it includes cross-ethnic analysis, the study presented here is based only on a Canadian sample of youth. As such there is a need to replicate the study samples of youth internationally in order to maintain the instrument's distinction as a cross culturally relevant measure of resilience.

Second, although the sample size is large, participants were not randomly selected. Given the narrow sample included in the study, the measure's discriminant validity still needs to be established using alternative samples of youth. Cutoff scores, convergent validity, and predictive validity would also still need to be established (Terwee et al., 2007).

As statistical evidence around the CYRM-28 grows, it lends confidence to use of the measure as either a global scale of resilience and, or, the use of its subscales to measure specific processes associated with resilience.

Declaration of Conflicting Interests

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